Minutes of the ISO TC184/SC4/WG3 Meeting
Orlando, Florida, USA
1998-02-02/05

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ISO TC184/SC4/WG3 N738

Attendees

Last Name	First Name	Country	Monday AM	Monday PM	Thursday PM
Adam	David	UK	x		
Amaral	Chuck	USA	x		
Ang	Jenny	Singapore			x
Arntz	Theo	Netherlands	x		
Bair	Richard	USA	x		
Brorson	Per	Sweden	x		
Burkett	Bill	USA	x	x	x
Cain	Bill	USA	x		
Carroll	Greg	USA		x	
Chinn	Janice	USA	x		
Conkol	Gary	USA	x	x	x
Crawford	Jim	USA		x	
Danielson	Mike	USA	x	x	x
Dreisbach	Rodney	USA	x	x	
Dunford	John	UK	x		x
Endres	Michael	USA		x	
Fisher	Robert	USA	x		
Freschette	Simon	USA		x	
Frisch	Harold	USA	x		x
Goult	Ray	UK	x	x	x
Grafe	Christine	Germany	x	x	x
Gruttke	William	USA	x		
Guy	Jeff	UK	x	x	
Haas	Wolfgang	Germany		x	
Hayford	Mike	USA	x	x	x
Hiraoka	H.	Japan		x	x
Holm	Torboru	Sweden	x	x	
Hunten	Keith	USA		x	x
Ishikawa	Yoshiaki	Japan	x		x
Johansson	Mathias	Germany		x	
Jones	Martin	Australia	x		
Kalyanaparupathy	Venkatraman	USA		x	
Kimber	W. Eliot	USA	x		
Kindrick	Jim	USA			x
Kjellberg	Torsten	Sweden	x	x	
Kline	Steve	USA	x		
Kupke	Steve	USA		x	x
Labat	Audre	France	x		

Lauro	Luciano	Italy		x	x
Leal	David	UK	x		x
LeClair	Lee	USA	x	x	x
Magnusson	Jarl	Sweden	x		
Mays	Jim	USA			x
Mohrmann	Juergen	Germany	x	x	x
Moreno	Anna	Italy	x	x	x
Nazemets	John	USA			x
Newling	Nigel	UK	x	x	
Palmer	Mark	USA	x	x	x
Paul	Greg	USA		x	
Pearson	Mark	UK	x	x	
Philipp	Martin	Germany	x	x	x
Polikaitis	Linas	USA			x
Price	David	USA		x	x
Radack	Gerald	USA	x	x	x
Ragnes	Jorulv	Norway		x	
Rivers-Moore	Daniel	UK	x		x
Roberts	Jay	US	x		
Sandsmark	Nils	Norway	x	x	x
Schilli	Bruno	USA			x
Shaw	Nigel	USA			x
Sigimura	Nobohiro	Japan		x	
Silvili	Bruno	Germany	x		
Smits	Loek	Netherlands	x	x	x
Stanton	Ed	USA		x	
Staub	Gunter	Germany			x
Storer	Graham	UK			x
Suzuki	Masaru	Japan			x
Swindells	Norman	UK	x	x	x
Tocco	Mark	USA		x	
Turner	Tim	UK	x		x
Tutton	Phil	UK	x	x	
Viel	Christophe	France		x	
Warren	Tom	USA			x
Wasmer	Anna	Germany		x	
Wenzel	Bernd	Germany			x
Wilson	Peter	USA	x		
Wise	Timothy	USA	x		x
Ziolko	Glen	USA	x		x

Monday 1030-1200 session

General business

The meeting opened at 1040 with round table introductions.

Tim Wise was appointed as note-taker.

Radack reviewed the voting procedure--consensus is preferred if possible (so we do not have to vote), but he will poll experts if required. He noted that the official list of experts is in a document from the Secretariat (SC4 N635). One needs to be on the list to be able to vote.

The agenda was reviewed, and there were no additions or changes.

Radack announced that Len Slovensky has resigned as leader of T7/11—volunteers to take over should contact him. Nils Sandsmark has already volunteered to take over T21 (subject to confirmation by the team), and Daniel Rivers-Moore has volunteered to take up leadership of T14.

Radack requested, and the team leaders agreed, that there would be meeting with team leaders Wednesday during lunch.

AP coordination, schedule issues and dependencies

Martin Philipp presented an AP-AIC coordination chart. It contained two tables:

- The first table linked APs to the AICs being used by the APs
- The second table listed part numbers, names of individuals involved, etc.

The chart can be found on the Web at: http://www.dik.maschinenbau.tu-darmstadt.de/forschung_eng/ap214/aic_ap_coordination/aic_ap/index.html.

It was agreed that AP coordination issues would be folded into the evening plenary's discussion.

Project status database: Radack passed out status sheets. There was a concern about knowing project status viz a viz grandfathering of APs.

Expert attendance list: It was noted that many attendees are not on the list of experts. There is uncertainty among some as to how to be nominated as an expert. Radack agreed to send out a list of national body contacts to the WG3 exploder.

Radack announced that the chair of SC4 is considering realigning all of the schedules to streamline larger meetings and to go to a single plenary.

SEDS issues: Radack noted that there are many old SEDS issues. It was agreed that they be handed out to teams for resolution by the end of the week. [The AP 203 SEDS issues were later given to Larry McKee; the AP 201 and 202 SEDS issues were given to Linas Polikaitis.]

The session adjourned 1143.

Monday 1700-1900 session

Proposed Type III Technical Report: Implementation subsets of AP 203 conformance class 1

Larry McKee made a presentation on a Proposed Type III Technical Report: "Implementation subsets of AP 203 conformance class 1." A draft of the proposed TR is on Solis as WG3 N713.

McKee explained that when AP 203 was originally being developed, there was a problem with combinations of conformance classses. There must be a conformance class (CC) for each combination of capabilities that must be supported by a conforming CAD system. The original decision was to limit AP 203 to four CCs, but for practical reasons they raised the number of CCs to six. However, CAD vendors have implemented a relatively small subset of product data—they have not implemented all of CC 1. The preprocessors are producing legal CC 1 files, since there is no requirement that they output every entity in a particular CC. On

the other hand, postprocessors have to read and process anything in CC 1. CAD vendors have resisted this and thus their products will not be conformant to AP 203. Due to errors or deficiencies in AP 203, the implementors are also making changes to AP 203 that are becoming *de facto* standards, but are leading problems with anti-trust laws, etc.

WG3 N713 documents the subsets within AP 203 that are actually being used by CAD vendors and is intended to form the basis of an implementors' agreement. It is consistent with ISO rules to publish such an agreement as a Type III Technical Report (TRIII). A TR passes through the same process as any other ISO document. This has not been done before in the STEP world. The reason for doing it now is expediency. Options include Technical Corrigenda, Amendments, and new editions. Because of: the number of SEDS issues, other extensions desired by the users, etc., these approaches will take more time. We also need to avoid the perception at this point that AP 203 is undergoing rapid change. A TRIII allows us to make changes to the CCs while leaving the actual standard unchanged.

If we go through with the Type III TR, ITI Michigan can conformance test to the new CCs.

This was close enough to a change of requirements that Sharon Kemmerer, at the time, said that we could not do a TC. We have to do an amendment.

There are three subsets specified in the TR:

Subset 1: Absolute minimum: rudimentary product identificaiton and structure

Subset 2: Product identification structure and effectivity

Subset 3: Engineering change identification

Discussion

Wasmer: Is any change necessary to standing documents?

McKee: There is a 99.999% chance that they will change Part 303 to align with the new conformance classes.

Viel: Do you have ideas of changing inclusion of CCs 2-6, which implies CAD systems must generate the minimum CC1 entities.

McKee: Minimum conformance according to the TR will be subset 1 + advanced B-rep.

Q: What is difference between minimum subset and AP 204?

McKee: There would be minute differences because of the product structure and product id reqs of 203. 204 does not require a person and organization as a design owner.

Mohrmann: Is a normative reference to a TR Type III allowed?

McKee: Need to check on this.

Q: What is the impact on new edition or amendment of 203? Will it be published along the lines of these CCs?

McKee: There is a PWI study project to take a look at all proposed changes to AP 203 and see how we will accommodate them. Options are TCs, amendments, new editions. May do some or all of them to 203.

Wasmer: Will this be applied to fix problems with modules?

Price: The aim is to fix conformance class problem but this idea will not be applied to modules.

Q: What is the difference between subset 1 Class 6 and Part 204.

McKee: There would be minute differences because of the product structure and product id reqirements of AP 203. AP 204 does not require a person and organization as a design owner.

Q: What are the differences between Type I, II and III TRs?

McKee:

- Type I – required support cannot be obtained for publication of an IS despite repeated efforts
- Type II – still under technical development or other reasons
- Type III – TC has collected data at different time from when published as IS

This is defined in the foreword to N713. Permission for Type I and Type II required approval of ISO TMB but not Type 3. Part 303 is a Type II TR. Vendors will be able to claim conformance to AP 203 if conform to the proposed TR. The aim is reduce what vendors have to do to be legal.

There were no objections to proceeding forward with the TRIII. Some people wanted reassurance that a TRIII has the same weight as an International Standard. McKee replied that clarification of the issues and facts needs to be done to assist and support the ballot process.

Collaboration agreement with IAI

Wolfgang Haas said that the agreement has been drafted and that a final discussion would be held Tuesday. It was agreed to place it on the agenda for Thursday. [There was no discussion held at the Thursday WG3 plenary.]

Compliance with STEP

Cristophe Viel gave a presentation on WG11, summarized as follows.

The scope of WG11 includes EXPRESS, implementation methods and conformance testing.

Conformance testing is an activity to assess wether a given implementation satisfies the requirments identified in the standard. Conformance testing can be done either by an end user or an independent laboratory. By doing with testing laboratory, there is no need to repeat testing for each end user. The objective of a laboratory program is to provide services for assessing the conformance of implementations and certifying the implementations, instead of end users having to do their own testing. Conformance testing focuses on common points of interest between all end users.

This approach implies that:

- Requirements must be be precisely identifed.
- For an AP, there is an infinite number of requirements that may be tested.
- The ATS must reflect the requirements that have been identified as major.
- The testing method and test results must be independent of the tester.

The procedure and reqirements are standardised in Parts 31, 32, 34, and 35.

Responsibility is split as following:

- WG11 is the home for the 30 series parts.

- WG3 is the home for the AP and their ATS
- The Quality Committee (QC) is the home for AP and ATS development guidelines

ATS development

Viel continued as follows.

It has been found that AP and ATS benefit from simultaneous development.

Individual test cases represent the first instance of the data in the AP. Creating them helps the vaidation of the model.

Decomposition of the domain into UoF relies on the same strategy for the decomposition of the ATS into groups of test cases.

There was criticism of ATS guidelines on level of coverage. Came to following solution at last meeting: The test cases must correspond to each AO identified in the AP. How an implementation deals with an AO is reflected in the set of criteria defined in the test case.

Claims of Conformance

Swindells said that the question comes not so much with products. It came up with a project in which people said "we have used STEP for data exchange" when they haven't actually used the IRs.

Shaw replied that we do not have a trademark on word of STEP. STEP is a licensed trademark of Siemens for a PLC language. They at first objected to the use of "STEP" in the context of ISO 10303. 2 or 3 later, they withdrew their objection to things connected to ISO 10303 and international standards.

Palmer said that some vendors were at the Chester presentation and also went to other arenas, claiming that they have STEP compliant warehouses.

Shaw said that you have to work hard to find the word "STEP" in ISO 10303. Once or twice the following issue came up: "What can you expect from a system implemented based on EXPRESS?" Once or twice references were made to a Part 20 that says: "Here are the requirements for any system derived from EXPRESS." There may be some value to defining Part 20 in that light to give consistency of implementations.

Dunford proposed the need to distinguish between a formal definition based on compliance with ISO 10303 and general usage of the methods used in development of STEP standards.

Swindells volunteered to draft a position statement for the Thursday meeting. (This was not done due to lack of time.)

Adequacy of methods for achieving interoperability

John Dunford presented the following on the NATO perspective on the adequacy of methods for achieving interoperability: In order for information to be distributed throught the life cycle there is a need for consistent linking and referencing. The current SC4 projects have several sets of activities needing linking and coordination of information. SC4 will have to move quickly to establish and maintain a coherent approach to these approaches.

Dunford proposed that WG3 adopt the position that modules will become the target vehicle for extending and improving AP interoperability over the product life cycle. He also said that WG10 should establish a method for WG3 members and others to find user requirments into core modules developments.

Burkett said that interoperability is an implementation issue.

Price disagreed. He said that WG10 and WG11 are information technology providers to customers and customers set requirements. Burkett Customers concerned with content and functionallity and not methodology.

Dunford said that a way of setting requirements is not available. A member of the audience said that WG10 is coming up with a method. Burkett said we need a "requirements architecture." Radack pointed out that an attempt to do a requirements document for SC4 in 1997 failed due to lack of resources. Price said that he is now responsible and will revive the task.

Shaw should modularisation be directed to "as-is" or to "as-should be."

Some felt that there is a need for a formal way of inputting requirements. Price said that WG10 would describe current activities for WG3 at the Thursday plenary.

Fisher said that technical coordination between APs and between SC4 groups is needed. As a means for gaining technical understanding, he proposed that technical discussions be held on focused issues.

There was support for cross talk in order to be more open to core model development.

It was agreed that Fisher, Mohrmann, Dunford and Radack would discuss offline and prepare a proposal for the Thursday session.

Thursday 1700-1900 session

WG10 Presentation

Application Modules

David Price gave a presentation on application modules.

Price presented results of previous workshops including agreement to proceed by experimentation. Development should continue parallel to SC4 and need for supporting organization under umbrella of SC4

Price a schematic of the AP modularization approach.

One aim is to enable vendors to implement smaller subset than is possible at present.

Price presented a plan to develop an initial set of modules.

Discussion

Burkett asked if overlaps between modules will be allowed. Price answered that overlaps will exist but the objects will only be documented in one place.

Price said that AMs play a role similar to AICs. The aim of the current effort is to resolve technical issues and not be concerned with publishing issues and ownership problems.

Moehrmann asked about the subdivision mechanism. Price said that the changes allowed in a subdivision would be limited to scope refinement—the technical content must not change, only the documentation. Trying to enable modularise Aps but not prescribe that they should be done this way. Proposal is not dissimilar to AICs but benefit is that waiting for second AP is not necessary. Tim Turner difference is that Shipbuilding core model is at ARM while AMs are interpreted from IRs. Shipbuilding will look at how to extend BB appproach with AIM mapping.

Radack if scope refinement what happens to old version. Now have two modules (say) in new version.

Structure for SC4 standards

Bernd Wenzel made a presentation on the work to develop a structure for SC4 standards.

The preference is to have one logical data store from which anyone can extract the data that he needs. The aim is "Lego APs."

The integration model is at a higher level of abstraction than the application model. If the integration model is close to the current IRs then we are close to Price approach.

[A user] needs an interface model which is a subset of his application data model that needs to be integrated (not everything needs to be integrated).

Finally, additions are needed to extend integrated data model as new requirements appear.

Discussion

Dunford asked how long it would be before the structure would be available and usable.

Wenzel said that the "technical answer" is 1.5 to 2 years to document the methodology and the first generation integration model. He was not sure about the "political answer."

Burkett asked what is standardised—components may be from different committees.

Wenzel said the interface model should be the responsibility of SC4.

It was asked how the new integration model differs from the current Integrated Resources (IRs). Wenzel said that the integrated model may be as primitive as in EPISTLE structures.

Burkett asked what makes EPISTLE model better than IRs. Wenzel replied that the EPISTLE model has extremely primitive structures and enables one to add attributes as new entitites to achieve upward compatablity

SGML and Industrial Data

Nigel Shaw made a presentation on a preliminary work item (PWI) on the general subject of industrial data and product documentation. WG3 T14 is the focus of this activity. The main activity is to link EXPRESS and HYTIME to be able to hyperlink to points in a Part 21 file and have links into SGML files. An SGML string EXPRESS resource will be developed and extended to enable multimedia to be linked to STEP. The use of XML will enable Web browsers view EXPRESS data.

There was no discussion.

Development of STEP 2000

Ishikawa announced a framework that is to relate the industrial world to the information world based on requirements of the heirarchical customer supply chain.

There was no discussion.

Interoperability

John Dunford proposed that WG3 take the following positions:

- Modular architecture should be recognised by SC4 to achieve interoperability

- WG3 should take leading role in determining module requirements and priorities

There was no vote taken.

Mohrmann proposed that experiment be conducted with open technical forums. The aim is to agree on and document a common set of requirements. It was agreed to try this in Bad Aibling.

Mohrmann presented a preliminary list of topics. He proposed, and there was no dissent, that "product identification" and "link to organisation" be the topics for Bad Aibling. The time of workkshop was set for Tuesday morning. It was agreed that other WG3 events would not be excluded from this time period. However, teams that are meeting in parallel should be represented at the workshop if possible.

Bad Aibling Schedule

It was agreed that WG3 plenaries would be held Monday 1030 to 1200 and 1700 to 1900, and Thursday 1700 to 1900. The last half hour on Monday would be for a team leaders meeting.

AEC Coordination The former AEC subteams are now separate teams. Palmer reported that they met Thursday morning, and agreed that there is still a need for an AEC coordination mechanisms. They will meet again on Thursday morning in Bad Aibling.

Team Reports

See WG3 N736 for the team reports.